

ATRC *

1. Consumer VCR's require tradeoffs between compression format and data rate. The lowest cost VCR would directly record the transmitted data in compressed form. No new technology will be required for such a recorder.
2. The periodically occurring, spatially coded frames of MPEG compression provide advantages in achieving features such as search modes. These capabilities have not been demonstrated in experimental hardware.

MIT *

1. Signal may be directly recorded in digital format. Current VTR features possible, but very flexible control (i.e. arbitrary-rate, undegraded fast-forward and rewind) may require higher data rate and less recursive format.

Satellite

Q1. Is it possible to carry the ATV signal and an NTSC signal on the same transponder? If so, at what bandwidth? What other multiples are possible with your system?

NHK *

1. Required quality level determines the bandwidth needed for simultaneous transmission of ATV and NTSC signals. When the signal formats described in answer to Common Carrier Question 1 are used for satellite transmission, the bit rates and bandwidths are as shown in the following table:

ATV	NTSC	Total bit rate	Bandwidth
40 Mb/s	17 Mb/s	57 Mb/s	34 MHz
60 Mb/s	17 Mb/s	77 Mb/s	46 Mb/s
120 Mb/s	34 Mb/s	144 Mb/s	92 Mb/s

2. Narrow MUSE can also be transmitted using conventional FM modulation. In such a case, 45 MHz is required to transmit both N-MUSE and NTSC as described in the answer to Question 5 in the Broadcast section above.

GI *

1. It is possible. One HDTV and two NTSC signals can be carried within 24 MHz using QPSK.

Zenith/ATT *

1. See Broadcast section, Question 3.

ATRC *

1. Analog satellite links can use an FDM arrangement of AD-HDTV on a QPSK carrier, occupying 6 MHz, with NTSC on an FM carrier.
2. With digital satellite links providing about 60 Mb/s, a TDM mix of AD-HDTV and/or compressed digital NTSC can be carried. Three AD-HDTV channels can also be carried in a single transponder.

MIT *

1. Yes, it is possible. Specific multiples depend on modulation and bandwidth. At 50 Mb/s in a transponder, possible to carry two HDTV signals or one HDTV and several NTSC signals.

Q2. See questions 3 & 7 under Broadcast above.

NHK *

1. See the answers to 3 and 7 under Broadcast.

GI *

1. See the answers to 3 and 7 under Broadcast.

Zenith/ATT *

1. See the answers to 3 and 7 under Broadcast.

ATRC *

1. See the answers to 3 and 7 under Broadcast.

MIT *

1. See the answers to 3 and 7 under Broadcast.

IS/WP2-0207

19 MAY 92

**FCC Advisory Committee on Advanced Television Service
Implementation Subcommittee Working Party 2 on Transition Scenarios (IS/WP-2)**

Draft Final Report Executive Summary

IS/WP-2 was constituted to develop transition scenarios for the conversion to Advanced Television. In doing so, it sought to develop scenarios for each of the industry segments involved in the transition, to identify any potential differences in the implementations of the proposed systems, and to identify potential problems in the implementation of ATV.

Information was obtained through direct communications and surveys from proponents, professional and consumer equipment manufacturers, broadcasters, and experts in relevant industry sectors. The Working Party developed a series of PERT and Gantt charts and lists of underlying assumptions to serve as a reference for those tasked with implementing the ATV service.

The Working Party found that, in general, the time required to implement ATV is approximately the same for all industry sectors and for all proposed systems. The Working Party identified tasks on the critical path to implementation, first and foremost among which is the disclosure of and agreement on full technical details of the selected system sufficient to permit design and manufacture of integrated circuits and equipment for encoding, transmitting, receiving, and decoding ATV signals by parties other than the proponent.

IS/WP-2 identified the need for new towers in some locations, principally high population centers, as critical to the delivery of ATV to the largest proportion of the population of the United States. IS/WP-2 surveys indicate that, depending upon the exact power requirements of systems, between one-third and one-half of television stations will require new towers. On the other hand, IS/WP-2 found that, in the abstract, stations can implement ATV within the 5-year window established by the FCC. IS/WP-2 also found, however, that provision must be made in FCC procedures for those stations that, no matter how hard they try, will be precluded from implementing within the 5-year window by factors beyond their control. Economics were not considered in any of these conclusions.

Expert input and a survey of all consumer manufacturers indicate that ATV receivers will be generally available in the marketplace 2½—3 years following the unambiguous selection of a system. A small quantity of receivers may be available sooner. This presumes timely adoption of technical standards to support manufacture.

A cellular (multiple transmitting sites sharing the same frequency) approach to transmission has been suggested, which may optimize coverage and use of spectrum. This technique may be particularly important to stations whose implementation of ATV may be impeded by peak power requirements which are higher than originally expected (and consequent problems of tower loading, etc.). If this technique is proven, the Working Party recommends that the FCC give attention to the regulations required to enable its use.